method should be used instead of OLS to avoid selection bias due to censoring.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

CHRONIC OBSTRUCTIVE PULMONARY DISEASE—Clinical Outcomes Studies

PCO1

SMOKING BEHAVIOR AMONG COPD PATIENTS, SASKATCHEWAN CANADA

Curkendall SM[1], Goehring E[2], Stang MR[3], de Luise C[4], Lanes S[5], Jones JK[6]

[1]Health care Data Analysis, Vienna, VA, USA; [2]The Deggge Group; [3]Saskatchewan Health, Saskatchewan, Canada; [4]Pfizer, Inc; [5]Boehringer-Ingelheim Pharmaceuticals, Inc., Ingeheim, Germany; [6]The Degge Group, Ltd, Arlington, VA, USA

OBJECTIVES: A survey was conducted to compare smoking behavior and self-reported respiratory symptoms of persons with and without diagnosed COPD. **METHODS:** In a study conducted within the Saskatchewan Health database, persons over 40 years old with diagnosed COPD, emphysema or chronic bronchitis and at least two bronchodilator prescriptions within six months of respiratory diagnosis were identified (N = 11,493). An age/gender matched comparison group without COPD, asthma or any respiratory diagnoses or medications was identified (N = 22,986). A survey was mailed to an age/gender stratified random sample of 4002 subjects, half from the COPD group and half from the comparison group. **RESULTS:** The response rate was 41% among COPD patients and 40% in the comparison group. Among those with COPD, 80% had ever smoked, compared with 53% of those without COPD (OR: 4.01, CI: 3.19–5.04). Among ever smokers, 16% of COPD and 11% of non-COPD subjects were current smokers (OR: 1.58, CI: 1.09–2.29). A large proportion of the smokers, 73% in the COPD group and 49% in the non-COPD group, had smoked for over 30 years. Odds ratios for self-reported symptoms of COPD comparing the COPD cohort to non-COPD were 11.0 (CI: 8.1–15.1) for persistent cough, 10.4 (CI: 8.1–13.6) for phlegm with cough, 25.1 (CI: 18.5–34.0) for wheezing, and 18.5 (CI: 13.8–24.8) for shortness of breath with mild exercise. Among the subjects classified as non-COPD, 20% reported having any of the above-mentioned respiratory symptoms and only 2% reported having all four symptoms. **CONCLUSIONS:** Persons with diagnosed COPD are more likely to have been smokers in the past and had a longer smoking history than persons without COPD. Crude measures such as the proportion that ever smoked may not capture substantial differences in smoking-related illness. Self-reported respiratory symptoms supported the categorization of COPD vs. non-COPD made using administrative data.

PCO2

IMPACT OF ANEMIA ON HOSPITALIZATION AND MORTALITY IN ELDERLY PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND CHRONIC KIDNEY DISEASE

Coley KC, Saul MI, Kirisci L, Smith RB

University of Pittsburgh School of Pharmacy, Pittsburgh, PA, USA

OBJECTIVES: To determine the influence of anemia on hospitalization and mortality in elderly patients with chronic obstructive pulmonary disease (COPD) and chronic kidney disease (CKD). **METHODS:** We identified ambulatory patients over age 65 who had at least one outpatient hemoglobin lab between 1998 to 2002. Patients were identified using a medical record data repository from a large health care system in Western Pennsylvania. COPD was identified using ICD-9 coding and CKD was defined as having at least 2 GFR measurements <60 ml/min separated by at least 3 weeks. Demographic, comorbidity, laboratory, and visit data were collected. Anemia was defined by WHO criteria as a hemoglobin <13 g/dL in males and <12 g/dL in females. Cox proportional hazard models were used to estimate the hazard ratio of first hospitalization and death by adjusting for demographics and comorbidities. Hazard ratios of anemic and non-anemic cohorts were compared. **RESULTS:** There were 895 elderly patients (47% male; 87% white) identified with COPD and CKD. Comorbidities included hypertension in 86%, heart failure in 78%, and diabetes in 54% of patients. Males had higher rates of anemia (58% versus 49%, p = 0.006). Compared to non-anemic patients, those with anemia had a higher rate of hospitalization within 1 year (hazard ratio = 1.34, 95% CI: 1.14, 1.57). Mean inpatient days during the study timeframe were higher for anemic patients (51 verses 44 days, p = 0.03). The adjusted hazard ratio for all-cause mortality in anemic patients was 1.52 (95% CI: 1.18, 1.99). Mean survival time for anemic patients was 44.5 months and for non-anemic patients was 48.9 months (p = 0.003). **CONCLUSIONS:** The results of this study suggest that anemia is associated with a significant increase in the risk of hospitalization and death in elderly patients with COPD and CKD after adjusting for other comorbidities. The effect of anemia management on these outcomes should be evaluated in prospective clinical trials.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

CHRONIC OBSTRUCTIVE PULMONARY DISEASE—Cost Studies

PCO3

ESTIMATING COST-EFFECTIVENESS OF INHALED CORTICOSTEROIDS FOR TREATING CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN THE PRESENCE OF MISSING DATA

Gagnon YM[1], Briggs AH[2], Levy AR[3], Spencer S[4], Bale G[5], Spencer MD[6], Burge PS[5]

[1]Occam Research & Consulting Inc, Vancouver, BC, Canada; [2]University of Oxford, Oxford, United Kingdom; [3]University of British Columbia, Vancouver, BC, Canada; [4]St. George's Hospital Medical School, London, United Kingdom; [5]Birmingham Heartlands Hospital, Birmingham, United Kingdom; [6]GlaxoSmithKline Global Health Outcomes, Greenford, United Kingdom

OBJECTIVES: In preparation for exploring the potential cost-effectiveness of inhaled corticosteroids (ICS) for the treatment of chronic obstructive pulmonary disease (COPD), we explored the costs and outcomes of patients with COPD in the presence of missing data. **METHODS:** Using data on 751 patients enrolled in the ISOLDE randomized controlled trial that received either fluticasone propionate or placebo, the outcomes studied were COPD exacerbations, successfully treated weeks, rate of decline in FEV1, costs, survival and health status. In line with the original clinical analysis, costs and outcomes were estimated using a hierarchical multilevel model assuming data were missing at random. Further analyses explored the use of quality-adjusted survival techniques for health outcomes as well as multiple imputation methods to address missing data issues. **RESULTS:** In the base case analysis we estimated the incremental costs of ICS versus placebo to be £900 (95% confidence interval (CI): 100; 1700) and the additional effect of 0.59 (CI: 0; 1.3) exacerbations avoided and 3 (CI: 1.7; 4.5) successfully treated weeks. We explored the robustness of these results to alternative assumptions in extensive sensitivity analysis. While survival was higher